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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/014,895	12/10/2001	Jainamma Krotz	262/098	2397

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EXAMINER

FORTUNA, ANA M

ART UNIT	PAPER NUMBER
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1723

DATE MAILED: 03/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/014,895

Applicant(s)

KROTZ ET AL.

Examiner

Ana M Fortuna

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-85 is/are pending in the application.
- 4a) Of the above claim(s) 69-85 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 17-27, 32-34, 36-68 and 1015 is/are rejected.
- 7) ☒ Claim(s) 16 and 28-31, 35 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1/24/03, 12/31/04.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-8, 10-15, 17, 18, 19-27, 32-34 are rejected under 35 U.S.C. 102(e) as being anticipated by Wohstadter et al (6, 673,533 (hereinafter '533)). Reference '533 discloses a composite electrode, e.g. including a substrate including a layer of mesoporous polymer hydrogel overlying the electrode (abstract, column 3, lines 63 through column 4, lines 1-22), composite support are disclosed (column 4, second paragraph, and column 10, lines 11-34). '533 also discloses electrodes includes a plurality of binding domains (PMAMS), the binding domains are provided on the surface of an electrode, and can be selected to be a porous matrix (or matrices), which porous matrices can be s a porous material or gel, which can be supported on the electrode (column 15, lines 15-48). Regarding to the pore size of the permeation layer or porous material, '533 discloses the formation of channel on the porous material including a diameter between 0.5 to 100 micron, which is within the micron size claimed in claim 1(column 15, lines 53-57). The gel material or porous matrix on the electrode is

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disclosed as water-swollen gel, made for example of polyacrylamide (column 16, lines 118-26), as claimed in claims 10 and 11.

The thickness of claims 7-8 is disclosed by '533 (column 16, lines 53-58).

As to claims 15, 18, the binding of the gel layer or PMAMS by covalent bond e.g. by means of spacers, is disclosed in '533 (column 19, lines 35-42). Selecting a gold electrode, as claimed in claim 17, is also disclosed in '533 (column 19, lines 35-38). The attachment moiety, the covalent linking as claimed in claims 20-21 are also disclosed in '533 (column 16, lines 41-49, and lines 25-26). The covalent bond using spacers is also disclosed in '533 (column 10, lines 24-34, and column 19, lines 39-55).

Regarding claims 22-24, the biomolecule or moiety, e.g. nucleic acid, protein are disclosed in '533 (column 16, lines 3-14). The R groups of claims 25-27, are also disclosed in the reference ('533) (are also disclosed, (column 16, lines 57-62, and column 18, lines 12-22). As to claims 32-34 the acrylamide and acrylamide moiety, and covalent bond have been discussed above.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over by Wohstadter et al (6, 673,533 (hereinafter '533). Reference '553, discussed above, fails to disclose the thickness of 1.0 to 2.0 micron, however, teaches drying and storing the

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gel and reconstituting the gel during when is to be used in an assay, which inherently reduces the thickness (column 15, lines –23). It would have been obvious to one skilled in the art at the time the invention was made to expect a thickness reduction, e.g. from 5 microns to a lower thickness valued, depending on the degree of dryness desire.

Reducing the thickness to 2.0 microns is not critical to the gel of '533, since the gel can be stored in a wet or dry state.

Claim Rejections - 35 USC § 112

5. Claims 36-68 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 36 is incomplete, the definition of 0 as "porosity does not appears in the claim, rendering the claim indefinite. The claim is also unclear as to the "standard composition"; the claim is unclear as to whether the composition in parenthesis is intended.

Allowable Subject Matter

6. Claims 16, 28, 29-31, 35 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. Claims 36-68 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

8. The following is a statement of reasons for the indication of allowable subject matter: the combination of limitations of the claims above with claims 15 or 21, is not disclosed or suggested in the prior art of record.

The prior art also fails to suggest a particular degree of porosity in the mesoporous gel layer, as claimed in claims 36-68.

Claims 69-85 are withdrawn.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ana M Fortuna whose telephone number is (571) 272-1141. The examiner can normally be reached on 9:30-6:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda L. Walker can be reached on (571) 272-1151. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ana M Fortuna

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A handwritten signature in black ink, appearing to read 'L. H. T.', is written over the printed name.

Primary Examiner
Art Unit 1723

AMF

February 19, 2004